

An apparatus, system and method for increasing buffer status reporting efficiency and adapting buffer status reporting according to uplink capacity. User equipment is configured a [sic, to] monitor a usage of a plurality of buffers, detect one of a plurality of pre-selected conditions corresponding to at least one of the plurality of buffers, designate one of a plurality of buffer status reporting formats depending on the pre-selected condition detected, communicate a buffer status report to a network device in accordance with the buffer status reporting format designated. The buffer status reporting format is configured to minimize buffer status reporting overhead created by the communicating of the buffer status report.

The Court previously entered two Memorandum Opinion and Orders regarding claim construction as to the '802 Patent in the present litigation. *See* Doc. Nos. 163 & 165.

APPLICABLE LAW

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). The Court examines a patent’s intrinsic evidence to define the patented invention’s scope. *Id.* at 1313-1314; *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). Intrinsic evidence includes the claims, the rest of the specification, and the prosecution history. *Phillips*, 415 F.3d at 1312-13; *Bell Atl. Network Servs., Inc.*, 262 F.3d at 1267. The Court gives claim terms their ordinary and customary meaning as understood by one of ordinary skill in the art at the time of the invention. *Phillips*, 415 F.3d at 1312-13; *Alloc, Inc. v. Int’l Trade Comm’n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

Claim language guides the Court’s construction of claim terms. *Phillips*, 415 F.3d at 1314. “[T]he context in which a term is used in the asserted claim can be highly instructive.” *Id.* Other claims, asserted and un-asserted, can provide additional instruction because “terms are

normally used consistently throughout the patent.” *Id.* Differences among claims, such as additional limitations in dependent claims, can provide further guidance. *Id.*

“[C]laims ‘must be read in view of the specification, of which they are a part.’” *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995), *aff’d*, 517 U.S. 370 (1996)). “[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Id.* (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). In the specification, a patentee may define his own terms, give a claim term a different meaning that it would otherwise possess, or disclaim or disavow some claim scope. *Phillips*, 415 F.3d at 1316. Although the Court generally presumes terms possess their ordinary meaning, this presumption can be overcome by statements of clear disclaimer. *See SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1343-44 (Fed. Cir. 2001). This presumption does not arise when the patentee acts as his own lexicographer. *See Irdeto Access, Inc. v. EchoStar Satellite Corp.*, 383 F.3d 1295, 1301 (Fed. Cir. 2004).

The specification may also resolve ambiguous claim terms “where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone.” *Teleflex, Inc.*, 299 F.3d at 1325. For example, “[a] claim interpretation that excludes a preferred embodiment from the scope of the claim ‘is rarely, if ever, correct.’” *Globetrotter Software, Inc. v. Elam Computer Group Inc.*, 362 F.3d 1367, 1381 (Fed. Cir. 2004) (quoting *Vitronics Corp.*, 90 F.3d at 1583). But, “[a]lthough the specification may aid the court in interpreting the meaning of disputed language in the

claims, particular embodiments and examples appearing in the specification will not generally be read into the claims.” *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988); *see also Phillips*, 415 F.3d at 1323.

The prosecution history is another tool to supply the proper context for claim construction because a patentee may define a term during prosecution of the patent. *Home Diagnostics Inc. v. LifeScan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) (“As in the case of the specification, a patent applicant may define a term in prosecuting a patent.”). The well-established doctrine of prosecution disclaimer, “preclud[es] patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution.” *Omega Eng’g Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003). The prosecution history must show that the patentee clearly and unambiguously disclaimed or disavowed the proposed interpretation during prosecution to obtain claim allowance. *Middleton Inc. v. 3M Co.*, 311 F.3d 1384, 1388 (Fed. Cir. 2002); *see also Springs Window Fashions LP v. Novo Indus., L.P.*, 323 F.3d 989, 994 (Fed. Cir. 2003) (“The disclaimer . . . must be effected with ‘reasonable clarity and deliberateness.’”) (citations omitted). “Indeed, by distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover.” *Spectrum Int’l v. Sterilite Corp.*, 164 F.3d 1372, 1378-79 (Fed. Cir. 1988) (quotation omitted). “As a basic principle of claim interpretation, prosecution disclaimer promotes the public notice function of the intrinsic evidence and protects the public’s reliance on definitive statements made during prosecution.” *Omega Eng’g, Inc.*, 334 F.3d at 1324.

Although “less significant than the intrinsic record in determining the legally operative meaning of claim language,” the Court may rely on extrinsic evidence to “shed useful light on

the relevant art.” *Phillips*, 415 F.3d at 1317 (quotation omitted). Technical dictionaries and treatises may help the Court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but such sources may also provide overly broad definitions or may not be indicative of how terms are used in the patent. *Id.* at 1318. Similarly, expert testimony may aid the Court in determining the particular meaning of a term in the pertinent field, but “conclusory, unsupported assertions by experts as to the definition of a claim term are not useful.” *Id.* Generally, extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms.” *Id.*

CLAIM CONSTRUCTION

A. “uplink bandwidth”

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
“the space available in an uplink grant”	“a range of frequencies or data transmission rate, which does not include capacity and does not include space available in the PDU”

Doc. No. 156 at 3 & 15; Doc. No. 231 at 1. This term appears in Claims 1, 6, 12, 17, 23, and 24 of the ’820 Patent.

(1) The Parties’ Positions

During the course of briefing, the parties reached agreement that there exists a claim construction dispute. *See* Doc. No. 231 at 1.

Plaintiff submits that, during prosecution, the patentee replaced “uplink capacity” with “uplink bandwidth,” and for support the patentee referred to paragraph 66 of the specification, which is set forth in the issued ’820 Patent at column 10, lines 29-54. Doc. No. 127 at 7-8.

Defendants respond that the specification uses “bandwidth” to refer to a range of frequencies. Doc. No. 156 at 7 (citing ’820 Patent at 6:64, 6:65 & 7:1). Defendants also submit that the disclosure cited by Plaintiff (and cited by the patentee during prosecution) “is describing the purported benefits of the invention—minimizing ‘overhead’ and adapting to ‘bandwidth.’ In other words, the decision based on the uplink grant size may have the downstream effect of adapting to available bandwidth, but this does not mean the uplink grant is the same thing as bandwidth.” Doc. No. 156 at 7. Defendants submit that this disclosure “bears none of the hallmarks of lexicography—no express definitional language, no ‘i.e.’ equating ‘uplink grant’ and ‘bandwidth,’ and not even a direct link between the two different terms.” *Id.* at 10. As to the prosecution history itself, Defendants argue that the patentee distinguished the cited “Wu” reference, which Defendants submit disclosed selecting BSR [(buffer status report)] format based on available space in a PDU [(protocol data unit)]. *See id.* at 10-15. Defendants argue that Plaintiff cannot recapture what the patentee thus distinguished during prosecution. *See id.* Further, Defendants cite extrinsic dictionary definitions as well as expert opinions. *See id.* at 8-10. Defendants conclude that “‘bandwidth’ is a range of frequencies or data transmission rate and does not encompass space in the PDU and does not include capacity.” *Id.* at 8.

Plaintiff replies that Defendants’ proposed interpretation is at odds with the specification, and as to the prosecution history Plaintiff argues:

[T]he Defendants ignore the single most enlightening aspect of the file history—that the examiner interpreted “uplink capacity” to mean “the available space in the buffers *to receive sent data*[.]” *See* Dkt. No. 127-1 (’820 file history excerpts) at CCE001398 (emphasis added). The examiner did not demand that “uplink capacity” be changed to something more narrow to overcome Wu; rather, he “suggested that Applicant *more clearly define* ‘uplink capacity’ in the claims in order to more clearly define Applicant’s invention.” *See id.* (emphasis added). Pursuant to this request, the applicant changed “uplink capacity” to “uplink

bandwidth” and cited paragraph 0066 of the application as written description support for the amendment. *See* Dkt. No. 127-1 at CCE001416. Paragraph 0066 of the application became column 10, lines 29-44 of the printed patent, and as explained at length above, that portion of the specification associates the operation of “adapt[ing] to available UL bandwidth” with the preceding sentences in the paragraph that teach designating a long or short format based on whether there is space available in the uplink grant.

Doc. No. 231 at 6-7.

(2) Analysis

Claim 1 of the ’820 Patent, for example, recites (emphasis added):

1. A method, comprising:
 - monitoring a usage of a plurality of buffers;
 - detecting one of a plurality of pre-selected conditions corresponding to the plurality of buffers;
 - designating one of a plurality of buffer status reporting formats comprising a long buffer status reporting format and a short buffer status reporting format depending on the pre-selected condition detected; and
 - communicating a buffer status report to a network device in accordance with the buffer status reporting format designated, wherein the designating designates the long buffer status reporting format when there is sufficient *uplink bandwidth* to communicate using the long buffer status reporting format.

On one hand, as Defendants emphasized at the August 22, 2016 hearing, the February 2, 2011 Office Action asserted that Wu teaches that use of a long BSR is based on whether there is sufficient remaining space in the PDU to accommodate a long BSR:

Applicant also argues that the relied upon reference, US Patent No. 7,769,926 (hereinafter Wu), does not teach designating the long buffer status reporting format when there is sufficient uplink capacity to communicate using the long buffer status reporting format, as required by presently amended independent claims 6, 19, 27, and 28. However, the Examiner respectfully disagrees. Wu teaches that the available space of a Protocol Data Unit (PDU) is calculated based on the network resources allocated by the base station to the user equipment (Wu; Col 6 Lines 21 – 28). Designation of the long BSR is based on if the remaining space available in the PDU to be transmitted is enough to receive the long BSR, then the user equipment uses the PDU to transmit the data and the long BSR (Wu; Col 6 Lines 41 – 47). Based on the cited sections of Wu, the long BSR is designated when there is sufficient space for it in the PDU, the sufficient space

being based on the network resources (uplink capacity) allocated to the user equipment by the base station. Therefore, each and every limitation of the claims is taught by the prior art of record.

Doc. No. 156, Ex. 1, Feb. 2, 2011 Office Action at 4.

On the other hand, when the patentee replaced “uplink capacity” with “uplink bandwidth,” the patentee cited as support the following disclosure that appears in the specification of the ’820 Patent:

Additionally, in some embodiments, the size of an uplink (UL) grant could also be taken into account (i.e., the size of the uplink transport block). For example, as soon as more than one RBG [(radio bearer group)] has buffered data and there is enough room in the UL grant then a report using a long format may be communicated. If there is not enough UL grant then a short format with the RBG of highest priority or with the RBG with the largest amount of buffered data may be communicated. In other embodiments, as soon as more than one RBG has an amount of buffered data exceeds a threshold and there is enough room in the UL to grant a long format communication, then long BSR format is used, otherwise with the RBG of highest priority or with the RBG with the largest amount of buffered data may be communicated using a short format. Accordingly, the present invention minimizes the overhead associated to BSRs and adapts to available *UL bandwidth*.

’820 Patent at 10:29-44 (emphasis added).

This disclosure refers to “UL [(uplink)] bandwidth” in the context of the uplink grant, which is what Defendants argue was distinguished. Nonetheless, this context differs from space in an uplink buffer, which evidently had been the examiner’s understanding as set forth in an examiner interview summary:

The Examiner and the Applicant discussed the meaning of “uplink capacity” and how it is being interpreted in the current rejection. The Examiner stated that the “uplink capacity” is interpreted as the available space in the buffers to receive sent data of Wu. The Examiner then suggested that Applicant more clearly define “uplink capacity” in the claims in order to more clearly define Applicant’s invention.

Doc. No. 127, Ex. A, May 27, 2011 Interview Summary (CCE001398).

A reasonable reading of this prosecution history is that the patentee clarified that BSR format selection depends on the space available in an uplink grant. Because the prosecution history cited by Defendants thus itself appears to be inconsistent with Defendants' argument or at least is equally consistent with Plaintiff's argument, the Court hereby expressly rejects Defendant's prosecution history argument. *See Golight, Inc. v. Wal-Mart Stores, Inc.*, 355 F.3d 1327, 1332 (Fed. Cir. 2004) ("Because the statements in the prosecution history are subject to multiple reasonable interpretations, they do not constitute a clear and unmistakable departure from the ordinary meaning of the term . . ."). Also of note, whereas Defendants have focused on characterizing the Wu reference in a particular manner, and whereas Defendants have focused on the examiner's statements during prosecution, "[i]t is well settled, however, that it is the applicant, not the examiner, who must give up or disclaim subject matter that would otherwise fall within the scope of the claims." *Innova/Pure Water, Inc.*, 381 F.3d at 1124.

As to whether any construction is required, "[t]he Court believes that some construction of the disputed claim language will assist the jury to understand the claims." *See TQP Dev., LLC v. Merrill Lynch & Co., Inc.*, No. 2:08-CV-471, 2012 WL 1940849, at *2 (E.D. Tex. May 29, 2012) (Bryson, J.). As to the proper construction, Defendants have not adequately demonstrated that a "range of frequencies," such as described in the extrinsic evidence submitted by Defendants, would be relevant in the context of the claims at issue.

Thus, based on the above-discussed prosecution history and the above-quoted disclosure in the specification, the Court hereby construes **"uplink bandwidth"** to mean **"the space available in an uplink grant."**

CONCLUSION

The Court hereby adopts the above claim construction.

So ORDERED and SIGNED this 29th day of August, 2016.



K. NICOLE MITCHELL
UNITED STATES MAGISTRATE JUDGE